AMENDMENTS TO THE CLAIMS:

1. (Currently Amended) A method for controlling and monitoring ~~the~~ production of a thermoplastic extrusion ~~profiles~~ profile, particularly in an in-line production process with a print step, ~~characterized by the following features~~ comprising:

~~(a)~~ ~~The use of an optical neuro-fuzzy structured computer/design image data bank (12) for a visual representation of a thermoplastic extrusion profile design/pattern, wherein~~

~~(b)~~ ~~the client transmits~~

transmitting in electronic form a model for a pattern/design image of an extrusion profile to be produced ~~in electronic form, meaning via the Internet, e-mail, or a client-specific network (13a-c) and using a TIFF and/or JPEG file and/or a different data format,~~ to ~~the~~ an optical neuro-fuzzy structured computer/design image data bank ~~(12),;~~ ~~and wherein the~~

storing the image models ~~are stored~~ electronically and optically in the optical neuro-fuzzy structured computer/design image data bank ~~(12)~~ ~~and are linked~~

linking the image model to

~~(c)~~ an order for producing a design and/or pattern image of a thermoplastic extrusion profile; ~~and~~

~~(d)~~ electronically determining in the optical neuro-fuzzy structured computer/design image data bank ~~(12), the production~~ product parameters for ~~the~~ basic materials supplied by ~~the~~ a material supply facility ~~(1)~~, ~~the~~ extrusion parameters, including the cooling parameters for ~~the~~ an extrusion device with a cooling section ~~(2)~~, ~~the~~ pretreatment parameters for ~~the~~ a material pretreatment device ~~(3, 3a-c)~~, ~~the~~ optical design and pattern

image data and ~~the~~ printing parameters for the a printing device ~~(4)~~, ~~using~~ a parameter indicating whether to use ~~the~~ a serial background printing technique ~~(4a)~~ and/or ~~the~~ a piezo printing technique ~~(4b)~~, ~~the~~ coating parameters for the coating device ~~(5)~~, ~~the~~ optical inspection parameters for ~~the~~ an optical inspection device ~~(6)~~, and ~~the~~ assembly and packaging parameters for ~~the~~ an assembly and packaging device ~~(7) are electronically and optically determined,~~;

~~(e)~~ selecting a serial background printing technique ~~(4a)~~ and/or a piezo printing technique ~~(4b) is then selected~~ for the printing device ~~(4)~~ with the aid of the printing and image/design parameters stored in the optical neuro-fuzzy structured computer/design image data bank ~~(12),~~; and

~~(f)~~ ~~the client is sent~~sending an electronic confirmation ~~via the Internet, e-mail or a client-specific network (13a-c)~~ from the optical neuro-fuzzy structured computer/design image data bank ~~(12)~~ of the product and design parameters for producing a thermoplastic extrusion profile.

2. (Currently Amended) The method according to claim 1, ~~characterized in that the optical and electronic data for the design parameters, the method parameters, and the product parameters~~ further comprising:

~~are transmitted~~ transmitting at least said parameters from the~~via~~ optical neuro-fuzzy structured computer/design image data bank ~~(12)~~ to an electronic network ~~(10)~~ and/or a cabled and/or radio-controlled Ethernet ~~(10a)~~.

3. (Currently Amended) The method according to claim 2, ~~characterized in that~~ wherein the electronic network ~~(10)~~ is an electronic intelligent neuronal network ~~(10b)~~.

4. (Currently Amended) The method according to claim 2, ~~characterized in that~~further comprising: connecting ~~an intelligent neuronal network (10b) connects~~ at least two additional in-line production lines ~~(11)~~ for producing thermoplastic extrusion profiles with an intelligent neuronal network; and ~~wherein an electronic production planning system (9) determines~~ determining the degree of utilization of the individual in-line production lines with an electronic production planning system ~~(11)~~.

5. (Currently Amended) The method according to claim 1, ~~characterized in that~~ further comprising: transmitting from the optical neuro-fuzzy structured computer/design image data bank ~~(12)~~ electronically ~~transmits~~ to a central control station ~~(8)~~ the product parameters for the basic materials, the extrusion ~~method~~ parameters, [[-]] including the extrusion cooling parameters, [[-]] the pretreatment parameters, the optical design and pattern image data and the printing parameters for the serial background printing and/or piezo printing techniques ~~(4a,b)~~, the coating parameters, the optical inspection parameters, ~~as well as~~ and the assembly and packaging parameters.

6. (Currently Amended) The method according to claim 5, ~~characterized in that~~ further comprising: using the optical and electronic neuro-fuzzy structured computer/design image data transmitted by the data bank ~~(12)~~ to the central control station ~~(8) on the whole are used to~~

control, regulate and monitor the production of at least one in-line production line ~~(11)~~ with the associated devices ~~(1-7)~~ and using the following production steps:

(a) providing the basic material and material mixture;

(b) ~~extrusion~~ extruding with subsequent cooling;

(c) ~~material pretreatment~~ pretreating material for the printing operation;

(d) printing by means of a serial background printing technique (4a) and/or a piezo printing technique ~~(4b)~~;

(e) coating

(f) optically ~~inspection of~~ inspecting the extrusion profile; and

(g) ~~client~~[[-]]~~specific assembly~~ assembling and packaging according to pre-determined instructions.

7. (Currently Amended) The method according to claim 6, ~~characterized in that~~ further comprising: displaying ~~the electronic and optical neuro-fuzzy-structured computer/design image data from the data bank (12) are used to display~~ for ~~the~~ operating personnel in the central control station ~~(8)~~ the production control parameters and the production regulation parameters of the production devices ~~(1-7)~~ by means of a graphic user interface using the electronic and optical neuro fuzzy structured computer/design image data from the data bank~~(8a)~~.

8. (Currently Amended) The method according to claim 6, ~~characterized in that~~ wherein the step of providing the basic material and material mixture further comprises: electronically transmitting from the central control station ~~(8)~~ via a network ~~electronically transmits~~ a request

for the basic material and/or basic material mixtures~~, e.g. polyethylene, polypropylene, acryl butadiene styrene, polyvinylchloride etc or mixture combinations,~~ to a material supply facility with a distribution system; ~~(1)~~ and ~~supplies~~ supplying these materials to the extrusion device ~~(2)~~ for the extrusion process.

9. (Currently Amended) The method according to claim 6, ~~characterized in that~~ wherein extruding with subsequent cooling further comprises: controlling and regulating with the central control station ~~(8) controls and regulates~~ the extrusion process in the extrusion device ~~(2)~~, such that the thermoplastic extrusion profiles are extruded according to ~~client~~ received specifications and corresponding to the product parameters and the extrusion parameters stored in the optical neuro-fuzzy structured computer/design image data bank ~~(12)~~.

10. (Currently Amended) The method according to claim 6, ~~characterized in that~~ wherein the step of extruding with subsequent cooling further comprises: ~~following the extrusion~~, controlling and regulating with[[,]] the central control station ~~(8) controls and regulates the~~ a temperature for the cooling process of the extruded thermoplastic profile following the extrusion.

11. (Currently Amended) The method according to claim 6, ~~characterized in that~~ wherein the step of pretreating material for the printing operation further comprises: controlling and regulating with the central control station ~~(8) controls and regulates~~ the material pretreatment process in a material pretreatment device ~~(3)~~ by means of the pretreatment and process parameters.

12. (Currently Amended) The method according to claim 11, ~~characterized in that~~ wherein the material pretreatment device ~~(3)~~ comprises a flame-treatment device ~~(3a)~~ and ~~a~~ at least one of a physical and/or a chemical etching device ~~(3b)~~.

13. (Currently Amended) The method according to claim 12, ~~characterized in that~~ further comprising: ~~the physical and/or chemical etching device (3b) realizes~~ realizing a selective and/or reactive ion etching process and/or electro-chemical etching process on the thermoplastic extrusion profile with the physical and/or chemical etching device.

14. (Currently Amended) The method according to claim 12, ~~characterized in that~~ further comprising: controlling and regulating with the neuro-fuzzy structured computer/design image data bank ~~(12) controls and regulates~~ the pretreatment parameters and the method parameters for the etching device ~~(3b)~~, ~~as well as~~ and the etching process on a thermoplastic extrusion profile in the layer thickness range of 0.5 to 300µm, ~~preferably in the layer thickness range of 2 to 200µm~~, adapted to the material properties of the thermoplastic extrusion profile.

15. (Currently Amended) The method according to claim ~~6~~ 13, ~~characterized in that~~ further comprising: depositing ~~following the etching process~~ a bonding agent layer ~~is deposited~~ inside a coating device ~~(3c)~~ of the material pretreatment device ~~(3)~~, which deposit is controlled and regulated by the central control station, following the etching process ~~(8)~~.

16. (Currently Amended) The method according to claim 6~~, characterized in that~~ further

comprising: controlling and regulating ~~the central control station (8) controls and regulates~~ the printing step for the thermoplastic extrusion profiles in a printing device ~~(4),~~ with the central control station using the neuro-fuzzy structured design/pattern image data and ~~the~~ associated printing parameters from data bank ~~(12)~~.

17. (Currently Amended) The method according to claim 16, ~~characterized in that~~ wherein the printing device ~~(4)~~ uses ~~makes use of~~ a background printing technique ~~(4a)~~ and/or a piezo printing technique ~~(4b)~~.

18. (Currently Amended) The method according to claim 16, ~~characterized in that~~ further comprising: storing ~~the~~ a multi-colored design/pattern image data and the printing parameters for the printing operation ~~are stored~~ in the central control station ~~(8)~~ in the form of neuro-fuzzy structured design/pattern printing image categories and print-control parameter categories ~~to permit a faster actuation of the printing device (4) which uses the serial background printing technique (4a) and/or the piezo printing technique (4b)~~.

19. (Currently Amended) The method according to claim 16, ~~characterized in that~~ further comprising: controlling and regulating ~~the central control station (8) controls and regulates the~~ parallel background printing ~~(4a)~~ and/or piezo-printing techniques ~~(4b)~~ in ~~a~~ the printing device with the central control station ~~(4)~~ by means of the optical neuro-fuzzy structured design/pattern image data and ~~the~~ associated printing parameters, stored in the form of print image categories.

20. (Currently Amended) The method according to claim 6, ~~characterized in that~~ further comprising: controlling and regulating ~~the central control station (8) controls and regulates a~~ the coating device ~~(5)~~ with the central control station with the aid of the optical neuro-fuzzy structured coating parameters.

21. (Currently Amended) The method according to claim 20, ~~characterized in that~~ further comprising: depositing ~~the coating device (5) deposits~~ an abrasion-resistant layer~~, in particular a coat of lacquer,~~ onto the thermoplastic extrusion profile with the coating device.

22. (Currently Amended) The method ~~device~~ according to claim 6, ~~characterized in that~~ further comprising:

recording ~~an optical inspection device (6), comprising an image-recording camera and an evaluation unit (14), records the~~ a thermoplastic extrusion profile with the optical inspection device comprising an image-recording camera and an evaluation unit; and

~~transmits~~ transmitting the optical and electronic pixel image data ~~(15)~~ to an optical neuro-fuzzy structured computer-aided inspection data bank ~~(16)~~ via radio or electronic network.

23. (Currently Amended) The method ~~device~~ according to claim 22, ~~characterized in that~~ further comprising: creating an electronic and optical image comparison (image mapping) ~~is made~~ between the pixel image data ~~(15)~~ in the optical neuro-fuzzy structured computer-aided inspection data bank ~~(16)~~ and the stored optical neuro-fuzzy structured computer design/design image data ~~(12)~~ for detecting production-related deviations and defects in at least one of the

printing, applied by the printing device ~~(4; 4a-b)~~, and/or in the coating deposited by the coating device ~~(5)~~.

24. (Currently Amended) The method ~~device~~ according to claim ~~22~~ 23, ~~characterized in that~~ further comprising: transmitting the detected, production-related deviations and defects ~~are transmitted~~ via the radio or electronic network in the form of optical and electronic data from the optical neuro-fuzzy structured computer-aided inspection data bank ~~(16)~~ to the central control station; ~~(8)~~

categorizing ~~where they are categorized~~ the detected, production-related deviations and defects by means of neuro-fuzzy technology with the central control station; and

~~stored~~ storing the detected, production-related deviations and defects as electronically and optically detected defect image data in the form of defect image categories.

25. (Currently Amended) The method according to claim ~~6~~ 24, ~~characterized in that~~ further comprising: processing the stored neuro-fuzzy categorized defect image data/categories ~~are processed data technologically~~ in the central control station; ~~(8)~~ and

controlling and regulating ~~that the central control station (8) controls and regulates~~ the correction of these production-related defects, occurring in the printing device ~~(4) that uses the background printing technique (4a) and/or the piezo printing technique (4b)~~, with the central control station by means of the electronic network ~~(8b)~~.

26. (Currently Amended) The method according to claim ~~6~~ 23 ~~characterized in that~~ further

comprising: transmitting ~~the central control station (8) transmits~~ the defect data for the printing and/or coating operation via the electronic network ~~(8b)~~ to the assembly and packaging device from the central control station; ~~(7)~~ and

removing with ~~that~~ the assembly and packaging device ~~(7) removes~~ the defective thermoplastic extrusion profiles.

27. (Currently Amended) The method according to claim ~~6~~ 26, ~~characterized in that~~ further comprising: assembling and packing the thermoplastic extrusion profiles produced without defects ~~are assembled and packaged~~ according to ~~client~~ received specifications and based on the assembly/packaging parameters stored in the optical neuro-fuzzy structured computer/design image data bank ~~(12)~~.

28. (Currently Amended) The method according to claim 1, ~~characterized in that the client is~~ further comprising: ~~notified~~ notifying via a network connection ~~(13 a-c)~~ a recipient of the delivery time for the finished thermoplastic extrusion profiles.

29. (New) The method according to claim 14, wherein the layer thickness range is in the range of 2 to 200μm.

30. (New) The method according to claim 21 wherein the abrasion-resistant layer comprises a coat of lacquer.